EXPERIMENTAL LOGBOOK FOR STELLA'S RUNS ON 05/27/2016 AT PAB FNAL

EXPERIMENTAL SETUP

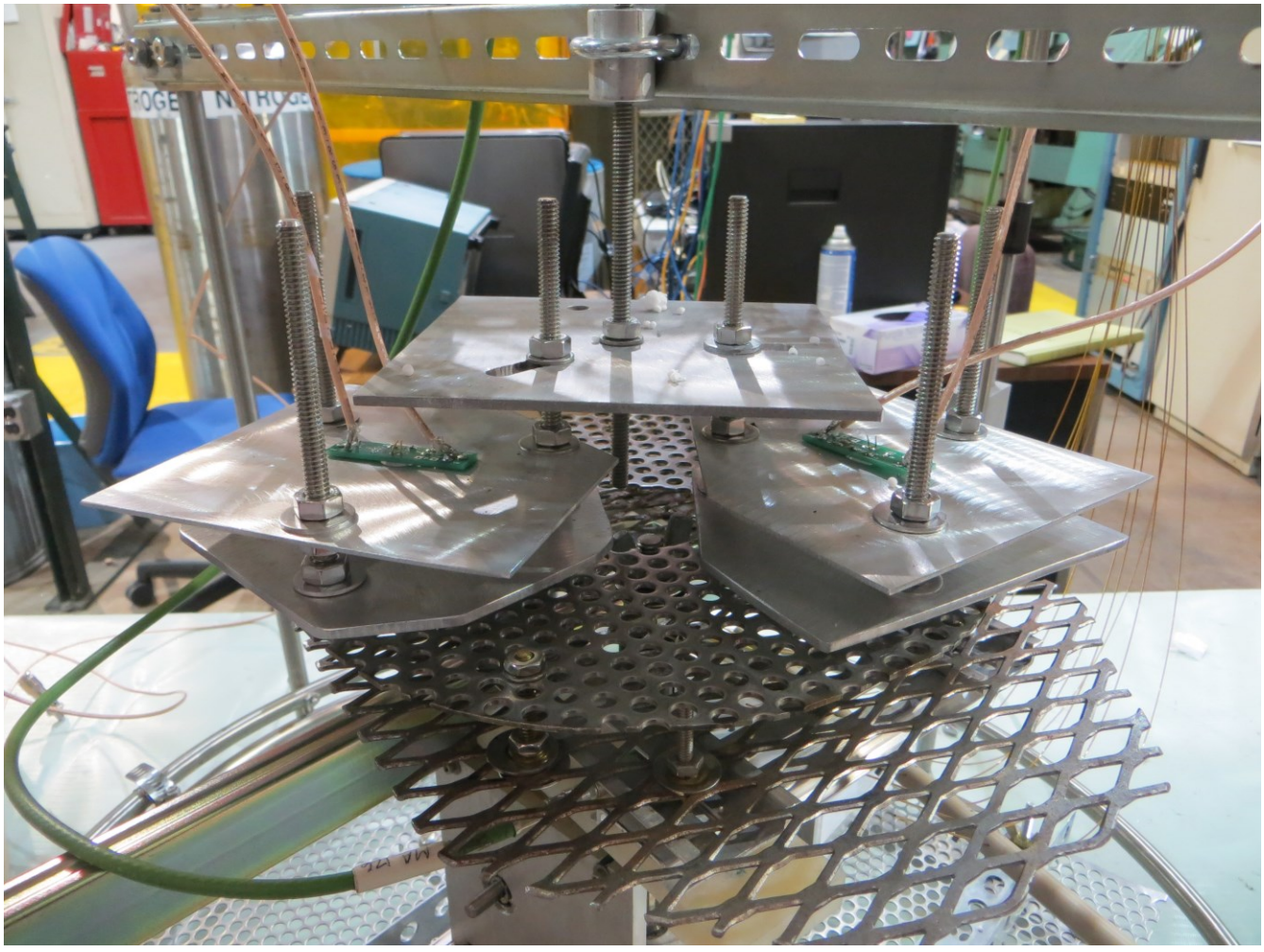

Figure 1 The picture shows the Aluminum plates where the two boards with the 2 VUV MPPCs.

Looking at Figure 1 on the right side sat the VUV MPPC A0008 connected to channel 4 on the oscilloscope and channel 1 on the voltage generator. Between the source and the board was placed a TPB coated plate. On the left side sat the VUV MPPC A0007 connected to channel 3 on the oscilloscope and channel 2 on the voltage

generator, that MPPC looked directly at 128 nm light coming from de-excitation of liquid Argon due to alpha particles.

Before starting filling Stella, the shutter of PAB has been lifted up for roughly 7 feet.

A purge with Argon gas has been done for 30 minutes. All the devices where turned off.

We started to fill Stella with liquid Argon. After 1 hour and 30 minutes we saw on the temperature sensors the level of the liquid had reached more than one half of Stella (where we placed the first sensor). We then changed tank.

We covered Stella with black curtains and we started to take data with the program timer_one_scope.cc.

RUNS

round 1 -> source on TPB plate, SiPM A0008 (ch4). everything covered with black curtains, light at PAB on. triggering on channel ch4. total 4 μs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 14.600 waveforms/channel

round 2-> stopped

round 2.c -> source on TPB plate, SiPM A0008 (ch4). everything covered with black curtains, light at PAB on. triggering on channel 3 (dark noise) . total 4 μs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 600 waveforms/channel

We measure with a multimeter the voltage on the two channels of the voltage generator: ch1 49.90 V ch2 49.83 V.

round 3 -> source on no plate (after 51 turns) SiPM A0007 (ch3). we changed the cover. triggering on ch3. total 4 μs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 19200 waveforms/channel

round 4 -> source on no plate (after 51 turns) SiPM A0007 (ch3). triggering on ch4 dark noise. total 4 μs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 1800 waveforms/channel

FROM NOW ON WE JUST REMOVE THE LAST LAYER TO MOVE THE SOURCE, AND THEN WE PUT IT BACK ON AGAIN FOR TAKING DATA

round 5 -> source on no plate (after 51 turns) SiPM A0007 (ch3). no light at PAB more cover. triggering on ch3 total 4 μs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 19000 waveforms/channel

round 6 -> source on no plate (after 51 turns) SiPM A0007 (ch3). no light at PAB. triggering on ch4 total 4 μs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 200 waveforms/channel

At this moment, the temperature on the two sensors was: 87.43 K on the lower sensor, 89.22 K on the higher one.

SO FAR, TLOWER 87.43 THIGHER 89.22

round 7 -> source on no plate (after 53 turns, we think we are not anymore over the source) SiPM A0007 (ch3). no light at PAB . triggering on ch3 total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 17900 waveforms/channel

round 8 -> source on TPB plate (after 92 turns, we think we are on the source) SiPM A0008 (ch4). no light at PAB. triggering on ch4 total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 13700 waveforms/channel

round 9 -> source on TPB plate (after 92 turns, we think we are on the source) SiPM A0008 (ch4). no light at PAB. triggering on ch3 (dark noise) total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 300 waveforms/channel

round 10 -> source on no plate (after 47 turns, we are no sure if we are on the source) SiPM A0007 (ch3). no light at PAB. triggering on ch3 total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 2100 waveforms/channel

round 11 -> source on no plate (after 47 + 2 turns, we are no sure if we are on the source) SiPM A0007 (ch3). no light at PAB. triggering on ch3 total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 5300 waveforms/channel

round 12 -> source on no plate (after 47 + 4 turns, we think we are on the source) SiPM A0007 (ch3). no light at PAB. triggering on ch3 total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 10500 waveforms/channel

round 13 -> source on no plate (after 47 + 6 turns, we are no sure if we are on the source) SiPM A0007 (ch3). no light at PAB. triggering on ch3 total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 19100 waveforms/channel

At this moment, the temperature on the two sensors was: 87.3 K on the lower sensor, 89.25 K on the higher one.

round 14 -> source on no plate (after 47 + 6 turns, we are no sure if we are on the source) SiPM A0007 (ch3). no light at PAB. triggering on ch4 dark noise total 4 µs, 500 samples per waveform/channel. 8.o ns/pt. 300s, 900 waveforms/channel

We measure with a multimeter the voltage on the two channels of the voltage generator: ch1 49.75 V ch2 49.92V.

All the data acquired can be found at https://www.dropbox.com/sh/yjk7efvcgzfgkg3/AAAnpDsbnWa-ns36ZjFeBJQ3a?dl=0